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- TI - Fine particle for water dispersible cosmetics, contains
phosphorylcholine group directly covalent bonded to powder surface
- IW - FINE PARTICLE WATER DISPERSE COSMETIC CONTAIN GROUP COVALENT BOND
POWDER SURFACE
- PA - (SHIS) SHISEIDO CO LTD
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- ICAI- A61K8/00; A61K8/02; A61K8/03; A61K8/04; A61K8/06; A61K8/11; A61K8/18;
A61K8/19; A61K8/55; A61K8/58; A61Q1/02; A61Q1/12; C07F9/09
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A61K8/30; A61Q1/02; A61Q1/12; C07F9/00
- AB - NOVELTY :
- A fine particle contains phosphorylcholine group (1) directly covalent
bonded to powder surface.
- DETAILED DESCRIPTION :
- A fine particle contains phosphorylcholine group of formula (1)
directly covalent bonded to powder surface.
- INDEPENDENT CLAIMS are included for:
- (1) the manufacture of fine particles for cosmetics by introducing an
amino group directly to a powder surface and reacting the compound
containing aldehyde obtained by oxidization cleavage reaction of
glycero phosphorylcholine, with the amino group; and
- (2) cosmetics which contains fine particle for water dispersible
cosmetics.
- [Image]
- USE :
- For water dispersible cosmetics (claimed).
- ADVANTAGE :
- The fine particle has excellent water dispersibility, and is stably
blended as inexpensive raw material for cosmetics.
- ORGANIC CHEMISTRY :
- Preferred Particle: The fine particle has hydroxyl group in its
surface. Preferred Method: Alternatively, the compound containing
carboxyl group obtained by oxidization cleavage reaction of glycero
phosphorylcholine is reacted with the amino group. A compound of
formula (2) and/or formula (3) is directly reacted with powder surface.
- m : 2-6;
- n : 1-4; and
- X1-X3 methoxy, ethoxy or halogen, and two of X1-X3 is methyl, ethyl,
propyl, isopropyl, butyl, or isobutyl group.
- [Image]
- EXAMPLE :
- Aldehyde compound containing phosphorylcholine group of formula (5)
was prepared using 1-alpha -glycero phosphorylcholine and sodium per
iodide. Ion exchange water (100 g), 2-propanol (100) and 3-aminopropyl
trimethoxy silane (2 g) were added to 500 ml Erlenmeyer flask and

stirred. The resulting mixture was heated at 80[deg]C, reflux boiled for 5 hours, cooled to room temperature. Then microparticle zinc oxide powder was filtered and washed for 3 times with methanol (100 ml). Then the microparticle zinc oxide powder was dried under reduced pressure and microparticle zinc oxide powder in which aminopropyl group was introduced, was obtained. Methanol (100 ml) was added to the obtained powder (10 g). Methanol solution of aldehyde compound containing phosphorylcholine group was mixed with the resulting mixture, and maintained at room temperature for 5 hours. The liquid mixture was cooled to ice bath, and cyano hydrosodium borate (0.3 g) was added. The resulting mixture was stirred for one night at room temperature, filtered washed with methanol (100 ml) for 3 times, dried under reduced pressure, and microparticle zinc oxide fine particle having phosphorylcholine group was obtained. The obtained fine particle had excellent water dispersibility.